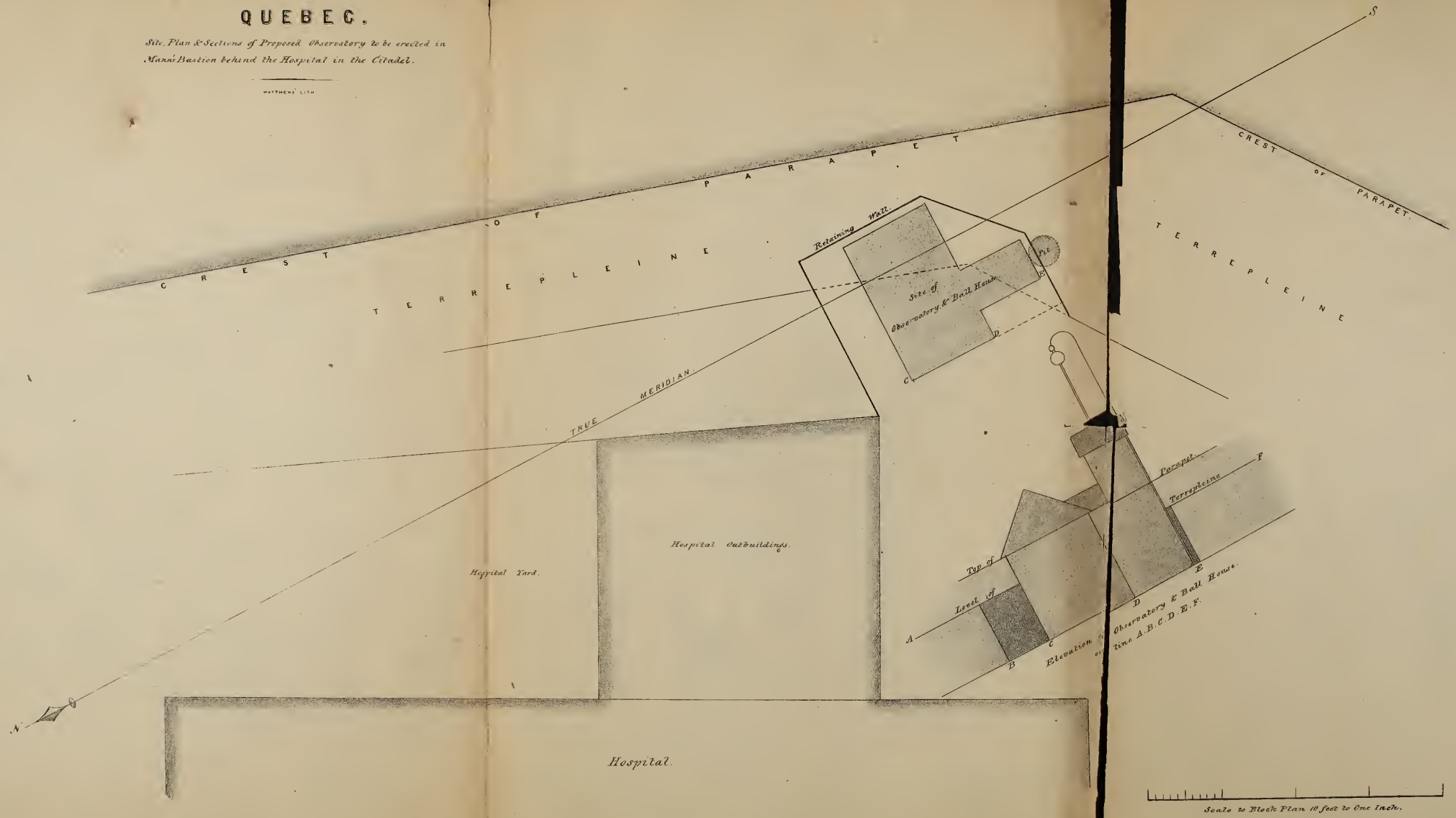
# QUEBEC.

*Site, Plan & Sections of Proposed Observatory to be erected in Mann's Bastion behind the Hospital in the Citadel.*

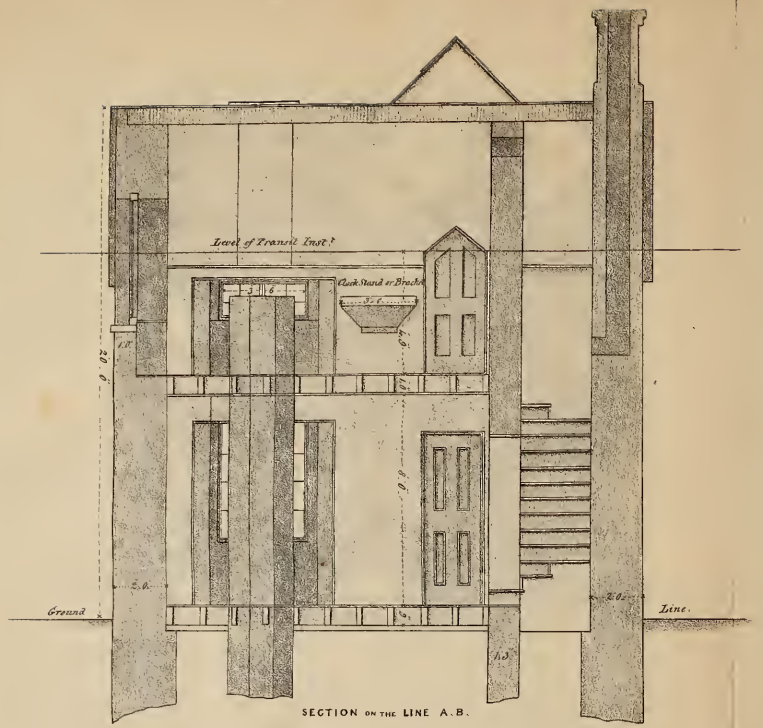
MATTHEWS' LITH



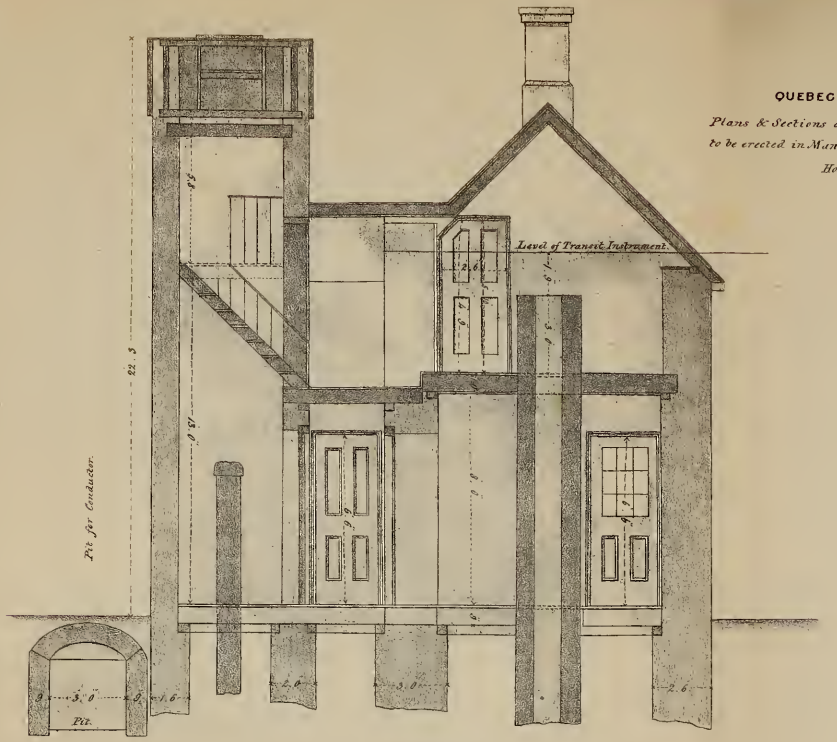
# QUEBEC CITADEL.

*Plans & Sections of proposed Observatory to be erected in Munro Bastion behind the Hospital.*

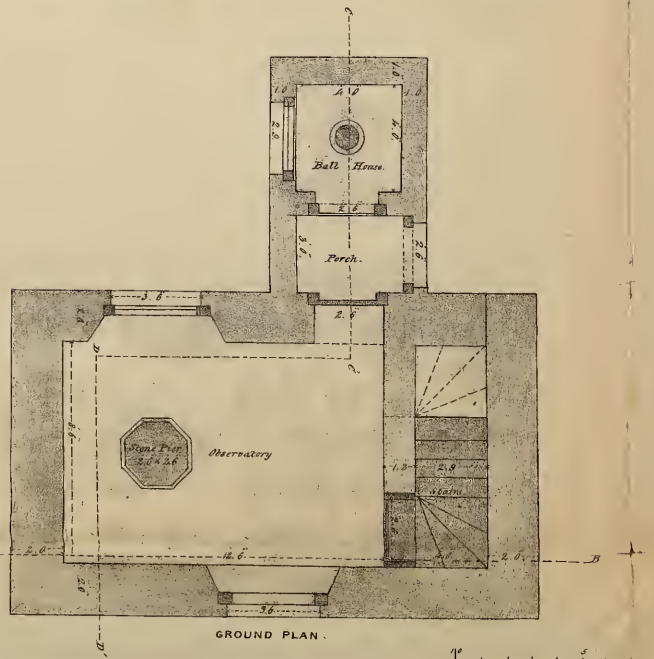
MATTHEWS' LITH



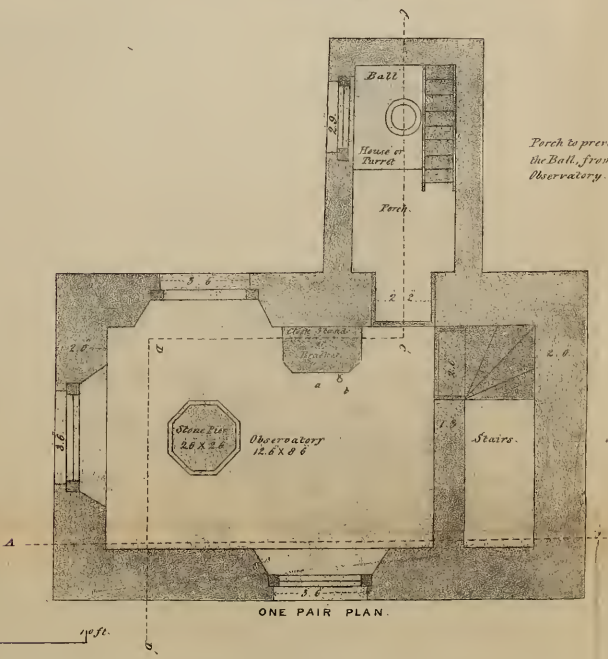

SECTION ON THE LINE A.B.




SECTION ON THE LINE C.C.D.D.




GROUND PLAN.




ONE PAIR PLAN.

*Porch to prevent the falling of the Ball, from Shaking the Observatory.*

*A. Situation of Observer about to give the signal of True-time.*
*B. Handle suspended 1ft above his right Shoulder & Communicating with the Machinery for the descent of the Ball*

*Scale to detail drawing 4 feet to an Inch.*

# MESSAGE.

## ELGIN AND KINCARDINE.

The GOVERNOR GENERAL transmits for the information of the LEGISLATIVE ASSEMBLY, copies of communications from the Secretary of State and the Royal Engineer Department, on the subject of erecting an Observatory at the Port of Quebec.

GOVERNMENT HOUSE,
Montreal, 9th March, 1849.

## SCHEDULE.

| No. | FROM | DATE. | SUBJECT. |
|---|---|---|---|
| | | 1847. | |
| 1 | Earl Grey to the Earl of Elgin,..... | 26th March, | States that the erection of an Observatory at Quebec has been recommended, for the purpose of communicating time accurately to the Shipping. Considers that the expenses ought to be provided for by the Provincial Legislature. |
| 2 | Letter from Colonel Holloway, R. E., to Major Campbell,..... | 8th November, | Transmitting Estimate and Plans. |
| | | 1848. | |
| 3 | Letter from ditto to ditto | 1st June, | Requesting to be informed of the decision of the Provincial Government. |
| 4 | Despatch from Earl Grey to the Earl of Elgin, | 3rd August, | Instruments for the proposed Observatory will be furnished by Her Majesty's Government. |

DOWNING STREET,
*26th March*, 1847.

MY LORD,—It has been for some time past in contemplation to build an Observatory at Quebec, for the express purpose of ascertaining and communicating time accurately to the Shipping.

The measure itself has been earnestly recommended by Captain Boxer, the Harbour Master of Quebec, by the Council of the Board of Trade of Quebec, by the late Commander of the Forces in Canada, Sir Richard Jackson, and by Professor Airy, the Astronomer Royal.

In a Report which was made by Professor Airy to Lord Stanley in July, 1844, it was stated that the reasons given by Captain Boxer for the establishment of an Observatory appeared to be most cogent. In every Port which has the same amount of commerce as Quebec, there should be provided means of obtaining time with that security for its general accuracy, which can be given only by the sanction of official authority. But it is especially desirable in a Port where physical circumstances make it so difficult for mariners to conduct successfully the ordinary operations of Nautical Astronomy, for obtaining time.

For reasons with which it is hardly necessary to trouble Your Lordship, it has hitherto been impracticable for the Commanding Royal Engineer to complete the task which has been assigned to him, of preparing a Plan and Estimate of the building, but as I am now sending to the Master General and Board of Ordnance some suggestions with which I have been favoured by Professor Airy, which may tend to facilitate the early completion of the Engineer's Estimate, I think it right to apprize Your Lordship that I incline at present to think, that the cost of erecting the proposed building, together with the charge of maintaining it, should be defrayed by the Legislature of Canada. And under that impression, I have instructed the Master General and Board to direct the Commanding Royal Engineer to lay the Estimate, when completed, before Your Lordship.

I have, &c.,

(Signed,) GREY.

Governor,
The Right Honourable,
The Earl of Elgin,
&c., &c., &c.

ROYAL ENGINEER HEAD QUARTERS' OFFICE,
MONTREAL, *8th November*, 1847.

SIR,—I have the honour to state, for the information of His Excellency the Governor General, that the Secretary of State for the Colonies has applied for Plans, and an Estimate to be prepared for erecting and maintaining an Observatory at Quebec, for the use of the Shipping at that Port, and other naval purposes. In consequence of a representation from the Harbour Master, Captain Boxer, R.N., a correspondence on the subject ensued with the Ordnance Authorities in England, and by them with Her Majesty's Government.

The result of the several communications has been, that, after due conference with Captain Boxer, a site between the Ramparts of Mann's Bastion and the new Bomb-proof Hospital in the Citadel has been deemed the most suitable position for the building.

Estimates, Plans, &c., for carrying the Secretary of States' views into effect, have been accordingly prepared, and were transmitted by me, under date 11th January last, to the Inspector General of Fortifications; by whom they were forwarded through the Master General and Board of Ordnance to Earl Grey, for such directions as His Lordship might think proper to give, and for the opinion of the Astronomer Royal, as well as for information as to the funds (not Ordnance) to which the expense of the proposed building, when finally decided upon, should be charged. His Lordship, in transmitting a Report from Professor Airy, on the construction of the proposed building, and the apparatus connected therewith (in which some practical uggestions, principally as regards the machinery, were made,) requested that, as soon as the Professor's suggestions should have been considered by me, the Plan and Estimate of the cost of the proposed building, as also the charge of maintaining the same, with all other requirements practicable, should be laid before the Governor General of Canada.

It will be observed that the estimate for building the Observatory and providing the necessary machinery for signalizing the time, but not including instruments of any kind, amounts to £526 15s. 5d. Sterling, and the probable expense of extra allowance for a Lieutenant on half-pay, of the Royal Navy, exclusive of quarters, fuel and candles, and rations for himself and servant, to which he would be entitled, as stated by Captain Boxer, will be about £100 Sterling, per annum.

With respect to the machinery for the Observatory, I propose to suggest that an arrangement should be effected by the Astronomer Royal, in communication with an officer of the Engineers to be selected in England for the purpose of enabling the latter to draw out a minute detail of what the Professor would recommend, and to watch the construction thereof, with reference to its applicability to the site and buildings recommended for adoption; and further, to submit that this officer, after superintending the construction of the whole in England, and having it carefully packed and shipped off for Quebec, should furnish a clear Report upon all its parts and properties, for the guidance of the Executive Officers in this country in putting up the same, and for preventing mistakes.

In conclusion, I beg to state that the within design has been submitted to, and has received the approval of, the Commander of the Forces, as signified in the enclosed copy of the Military Secretary's letter dated 22nd ultimo.

I have, &c.,

(Signed,) W. C. E. HOLLOWAY,
Col. Comdg. Royal Engineers.

Major Campbell,
&c., &c., &c.

[It is respectfully requested that the enclosed Estimate may be returned, when done with, by His Excellency.]

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P. S.—In addition to the Naval Officer, as Observer, a labourer to keep the building clean, and to oil the machinery, will doubtless also be necessary, at an expense of about £46 Sterling, per annum, exclusive of the regulated allowance.

The probable contingent sum for maintenance, in the purchase of oil, repair of machinery, &c., may be estimated at about £20 Sterling, per annum.

(Signed,) W. C. E. H.

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## QUEBEC.

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REPORT and ESTIMATE of the probable expenses of erecting an Observatory in the Citadel, with Time Signal attached, for the shipping in the Harbour.

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Amounting to £526 15s. 5d. Sterling.

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This amended Estimate for erecting an Observatory within the Citadel of Quebec so as to be in view of the shipping, is framed with reference to the Master General and Board's Order, dated 12th April, 1847, $\frac{s}{43}$, and to the observations of the Astronomer Royal, on the construction of the proposed building, to the general arrangement of which he has no objection.

The machinery is proposed to be prepared in England under the direction of an officer of Engineers, as it could not be executed in this country.

The site chosen by the Harbour Master is the rampart of Mann's Bastion in the Citadel, which is considered the most eligible and economical position for it in the Citadel, with reference to the shipping in the Roadstead.

The general arrangement of the building is shewn on the accompanying plan, and it is proposed that the whole of the machinery be made in England, and forwarded to Quebec.

The site for this building is to be excavated as shewn on plan, and the rock below the level of the yard to be blasted out for the foundations, drains and cess-pool, and the surplus stuff to be removed to a distance not exceeding 600 yards. The walls are to be carried up in Cap Rouge rubble masonry; and the foundations to the ground line to be done in courses from 9″ to 12″ high. The masonry of the retaining wall and counterforts is to be similar to that in the foundations of the building. The foundations of this wall to be 3′ 6″ thick and 3 feet below the level of the yard; the average thickness above the ground line to be 2′ 6″; the walls having 7 counterforts 2′ 6″×2′ 0″, spaced 7 feet from centre to centre. The two slopes on either side to be sodded with 3″ sods 1′ 6″ long ×12″ broad, and pinned down with cedar pins; the masonry in the walls of the Observatory above the ground line is to be similar to that in the foundations, but having vertical joints and horizontal beds, and carried up in courses varying from 12″ to 14″ in height; the windows and doors to have lintels thrown across half the thickness of the wall inside, and to be arched outside in *Ange Gardien* stones in courses from 3″ to 5″ thick and 15″ high. The pillar for the Transit Instrument is to be of Point aux Trembles stone, Ashlar masonry, fine boucharded in courses averaging 12″ high and to be chamfered at sides, and fine boucharded at the top and neatly levelled for the instruments. All the above named masonry to be set in mortar, the outside faces of the walls and chimney of the building to be hammer

dressed; the windows and door to have sills of Cap Rouge stone, 6″ thick at the outside, edge properly sunk, weathered, throated and fine boucharded; the door sill to extend through the wall, and to be morticed to take the door frame; the jambs to be rebated for the door and window frames, which are to be bedded and pointed in hair mortar. A cut stone bracket for the clock, of Pointe aux Trembles stone, to be worked as shewn on sketch, fine boucharded and set one foot in the wall; a brick box drain 6″ deep × 5″ wide, built in mortar in Canadian bricks with half brick sides and brick flat top and bottom to conduct the water from the roofs to the cess-pool for the lightning conductor, and the surplus water to be conveyed by a similar drain to the main drain, which is to be built with Canadian bricks as per drawing, with 9″ sides and brick on edge; bottom laid in cement; cemented one coat with Roman cement inside, and covered with a Cap Rouge stone 6″ thick, rough punched. One double stove pipe stone, and one single ditto, to be worked and fixed in the walls. The whole of the inside walls and window soffits, except the Ball Tower, to be rendered two coats and set, and the ceilings and the ground floor room and passage to be lath and plastered, two coats; and set with fine stuff; and the whole of the ceilings and walls, including those of the Ball Tower, to be limewashed two coats; wall and pole plate under the ends of the joists and rafters as shewn on plans, and to be of pine, rough 6″ × 4″, all the joists throughout to be of pine 8″×3″, rough; the two on each of the pillars, in the floors, and the trimmer on each side of it, and the intermediate joist trimmed between the two before mentioned, are all framed 8″ × 3″. The joists forming the platform in the Ball Tower above the step-ladder are 6″ × 3″ rough, framed and fixed, the ends being built 9″ in the wall—the other joists are 8″ × 3″ rough fixed only; the two placed in the window recesses to take the boards being only 6″ × 3″—the joists are placed on an average 1′ 4″ apart—the rafters are pine, rough framed and fixed 4″ × 2½″ in the building and 3″ × 2½″ over the Ball Tower and passage, and are placed on an average two feet apart, the two rafters, one on each side of each doorway, in the roof, for the Transit Instrument to be as the others but 4″ × 4″, and cemented, to carry away any water. The ridges to be of pine 9″ × 2″ rough, framed and fixed; the roofs to be covered with 1½″ pine boarding rough, edges shot, ploughed, tongued and tinned with the best I. C. tin, shewing 6″ to the weather, turned under the eaves, chased into the chimney and wall of Ball Tower, and pointed with cement.

The roof of the Ball Tower to have a purline on each side of pine, 3″ × 3″, rough, framed and fixed, to take the linings of the flaps, the rafters underside in the building and passage are lined with inch pine boarding, wrought side and edges and ploughed and tongued. Each opening in the roof of the building for the sight of the Transit Instrument, has two, one and a half pine wrought, ploughed, tongued, and ledged doors, hung with one pair to each door, of twenty cross garnet or T hinges and screws, fixed with hooks and eyes of wrought iron, and raised and kept open by rods to push up from the inside.

The door to admit the ball in and out is precisely similar to these, but single, instead of being hung folding. The eaves to have a 5″ tin gutter, (and a similar casing to be fixed for the conductor, 12′ 3″ long,) and 3″ tin rain water pipes at two corners of the building, all fixed by wrought iron brackets and holdfasts, to carry water from roofs into under ground drains.

A lightning conductor, as shewn on section, is provided, to be fixed by non-conducting materials to the wall, and to be let into the tank below, provided for the purpose.

The sash frames to be of pine, 4″×2½″, with oak sunk and rebated sills wrought, framed, rebated, headed and hollowed for sash with ¾″ bead, planted outside and fixed with holdfasts having 2″ chamfer bar sashes, with rounded and hollowed styles, throated water boards put together with white lead, fitted and hung with cast iron butt hinges, glazed with Newcastle C. Glass, and furnished with brass knob bolts for sashes, 10″ and 20″ long, put on with screws and a wrought iron handle for opening each. Round each window inside is to be planted a small O. G. moulding to cover the plastering, (and all the door frames to be similarly finished,) against the frame, and a window board 3″ wide, with rounded nosings, nailed to the sash frame for each window opening; the door openings, where there are not door-jambs of wood, are to have a pine angle staff beaded. The door frames shewn in the porch to be pine, 6″ and 4″, wrought, framed, rebated and headed, the two inner door frames to have oak sills, 6″ and 4″ rough, framed into them. The outside door frame to be tenoned into the stone step. The inside door frames to be of pine, 2½″ thick by the width of the walls, wrought, framed, rebated and beaded, nailed to three wood bricks built into the wall of pine, 4″×4″ rough. The outside door of the porch to be of 2″ pine, 6 panel bead and butt, both sides hung with one pair of 4″ cast iron butts and screws, furnished with an 8″ iron rim dead shot lock and 2 10″ barrel bolts; the other doors are 2″ pine moulded and square 6 panel doors; that at the bottom of the stairs to be a sash door, as shewn; the whole to be hung with four cast iron bolts and screws, and furnished with seven iron rim locks with brass knob furniture; the door at foot of staircase is glazed as sashes. The floors to be pine 1½″ thick, wrought, rebated and filleted, and the edges rounded, where there may be steps, and also round the space between the floor and pillar supporting the Transit Instrument, which space is lined with 1″ boarding wrought one side, and beaded, as also the step leading from the upper floor to the Ball Tower, and the floor next the Ball Tower.

The stairs to have 2″ pine strings wrought one side and housed for the steps and risers, morticed into 3″ square newels wrought, framed and housed; the steps and risers to be of 1½″ pine wrought 1 side, rounded nosings, and fixed with rough pine brackets. The steps leading to the platform to be as follows: 2 strings of pine 6″ wide, 2″ thick, wrought, 2 sides and edges, framed and housed and filled in with 1½″ pine wrought, 2 sides and edges as steps, framed and housed to strings—the steps to have a handrail 2½″ × 2½″ on one side, and returned at top as shewn, of oak wrought and rounded, having oak bar ballusters 1″ × 1″ housed into handrail and string; an oak post 12″ × 12″ wrought, framed and chamfered, to be sunk 3 feet into the ground for the ball, and the earth well rammed round ditto. The walls are to have an inch pine skirting 6″ wide, chamfered at top, scribed to the floor and fixed to plugs, &c. The top of the wall in the upper room to be lined with 1 inch pine board, wrought one side and rounded on edge, and fastened to the pine bricks 4″ × 4″ rough fixed, 2 feet apart. The whole of the inside wood and iron work, usually painted, to be painted 3 coats white, including doors, door frames, sashes, squares and frames, skirting and ceilings, where of wood work, including the flaps which are to be painted in the building, the inner ones two sides, and the outer one side, and edges, including all the iron work attached to them. The board under the ceiling of the upper floor to be also painted; a stove with pipes, stand, poker &c. complete, are provided to be fixed in the building, and a ground ladder, also roof and chimney ladders are provided for, with spruce sides, oak cleft rounds and a screw bolt and nut at each end, to every tenth round, and painted three coats common colour.

The probable coast of machinery for the Observatory, consisting of a ball, rods, cranks and every other requisite for fixing, hoisting and raising, &c., is inserted in the estimate, but no provision is made for the Instruments.

Proposed to be built by special contract.

# ESTIMATE.

*Erecting an Observatory in the Citadel with a Time Signal and the requisite machinery for raising the same.*

| QUEBEC. | | | Amount. | | |
|---|---|---|---|---|---|
| | | s. d. | £ | s. | d. |
| $211\frac{9}{27}$ Yards cube Excavating through stiff rubble and removing the stuff to a distance under 600 yards..... | $\frac{2}{3}$ $\frac{3}{4}$ | 1 $9\frac{1}{2}$ | 18 | 18 | $7\frac{1}{2}$ |
| $77\frac{5}{27}$ Yards cube Excavating through rock, and removing the stones arising therefrom to a distance under 600 yards..... | $\frac{7}{8}$ $\frac{8}{4}$ | 5 11 | 22 | 16 | 8 |
| $25\frac{2}{9}$ Yards super Sod Work laid flat..... | 11 | 1 0 | 1 | 5 | $2\frac{1}{2}$ |
| $2636\frac{1}{12}$ Feet cube rubble Masonry, of Cap Rouge stone, done in courses of 9″ to 12″ high..... | 13 | 0 $7\frac{1}{2}$ | 82 | 5 8 | $2\frac{1}{2}$ $0\frac{3}{4}$ |
| $2409\frac{2}{12}$ Feet cube do. do., all beds horizontal and joints vertical..... | 14 | 0 $8\frac{1}{2}$ | 85 | 6 | $5\frac{3}{4}$ |
| $81\frac{3}{12}$ Feet cube do. do., with Pointe aux Trembles stone..... | 16 | 3 3 | 13 | 4 | $0\frac{3}{4}$ |
| $44\frac{9}{12}$ Feet cube rubble Masonry, in vaulting courses, from 3″ to 5″ thick..... | 17 | 0 10 | 1 | 17 | $3\frac{1}{2}$ |
| $1434\frac{2}{12}$ Feet super hammer dressed face on rubble masonry,..... | 23 | 0 4 | 23 | 18 | $0\frac{1}{2}$ |
| $44\frac{5}{12}$ Feet lineal brick box drain, half brick sides, &c.,..... | 48 | 1 0 | 2 | 4 | 3 |
| 13 Sash and door frames bedded and pointed with haired mortar,..... ..... | 75 | 1 0 | 0 | 13 | 0 |
| $41\frac{10}{12}$ Feet super fine boucharding on Cap Rouge stone,..... | 76 | 1 3 | 2 | 19 | 3 |
| $44\frac{1}{12}$ Feet super rough do. do. do. do. ..... | $\frac{76}{97}$ | 1 1 | 2 | 7 | 9 |
| $10\frac{3}{12}$ Feet super fine boucharding on Pointe aux Trembles stone,..... | 77 | 1 2 | 0 | 11 | $11\frac{1}{2}$ |
| $20\frac{3}{12}$ Feet super rough punched flagging 6″ thick, squared, jointed and set,... | 82 | 1 10 | 1 | 17 | $1\frac{1}{2}$ |
| $138\frac{33}{12}$ Feet lineal sinking rebates for doors and window reveals in Cap Rouge stone,..... | 88 | 2 0 | 13 | 16 | 6 |
| 3 Mortices cut in stone,..... | 92 | 1 3 | 0 | 3 | 9 |
| 1 Cut stone pipe hole wrought on one face,..... | 98 | 4 0 | 0 | 4 | 0 |
| 1 Do. do. wrought on two faces,..... | 99 | 7 0 | 0 | 7 | 0 |
| $84\frac{2}{9}$ Yards super rendering 2 coats and set with fine stuff,..... | 125 | 1 1 | 4 | 11 | $2\frac{3}{4}$ |
| $12\frac{4}{9}$ Yards super. Lath and Plaster, 2 coats, and set with fine stuff..... | 131 | 1 5 | 0 | 17 | $7\frac{1}{2}$ |
| $11\frac{47}{100}$ Squares Lime, white, done twice..... ..... | 140 | 1 0 | 0 | 11 | $5\frac{1}{2}$ |
| 1 Pointe aux Trembles Stone, Clock Stand..... | × | 40 0 | 2 | 0 | 0 |
| $35\frac{3}{12}$ Feet cube Brick Work, with Canadian Bricks, laid in Roman Cement... | × | 1 9 | 3 | 1 | $8\frac{1}{4}$ |
| $\frac{8}{9}$ Yard super. do do on edge in do do..... | × | 5 0 | 0 | 4 | $5\frac{1}{4}$ |
| $5\frac{1}{9}$ Yards super. Rendering, 1 coat with Cement..... | × | 2 6 | 0 | 12 | $9\frac{1}{4}$ |
| $1\frac{2}{12}$ Foot cube Oak Scantling, 6″×4″, rough framed and fixed..... | 187 | 2 10 | 0 | 3 | $3\frac{1}{2}$ |
| 10 Feet cube do. do., 12″×12″, wrought, framed, chamfered and fixed | 190 | 2 11 | 1 | 9 | 2 |
| 22 Feet cube Pine Scantling, 6″×4″, rough, fixed..... | 191 | 0 11 | 1 | 0 | 2 |
| 1 Foot cube do. do., 6″×3″, do. do. ..... | 191 | 0 11 | 0 | 0 | 11 |
| $28\frac{8}{12}$ Feet cube do. do., 8″×3″, do. do. ..... ..... | 191 | 0 11 | 1 | 6 | $3\frac{1}{4}$ |
| $5\frac{1}{12}$ Feet cube do. do, 4″×4″, do. do. ..... | 191 | 1 0 | 0 | 5 | 1 |
| $3\frac{6}{12}$ Feet cube do. do., 9″×2″, do. do. ..... | 191 | 0 11 | 0 | 3 | $2\frac{1}{2}$ |
| $11\frac{5}{12}$ Feet cube do. do., 8″×3″, do. framed and fixed..... | 193 | 1 $6\frac{1}{2}$ | 0 | 17 | 7 |
| $2\frac{8}{12}$ Feet cube Pine Scantling 6″×3″ do. do. do. ..... | 193 | 1 $6\frac{1}{2}$ | 0 | 4 | $1\frac{1}{4}$ |
| $13\frac{2}{12}$ Feet cube do. do. 4″×$2\frac{1}{2}$″ do. do. do. ..... | 193 | 1 8 | 1 | 1 | $11\frac{1}{4}$ |
| $\frac{3}{12}$ Foot cube do. do. 3″×3″ do. do. do. ..... | 193 | 1 $9\frac{1}{2}$ | 0 | 0 | $8\frac{3}{4}$ |
| $4\frac{2}{12}$ Feet cube do. do. 3″×$2\frac{1}{2}$″ do. do. do. ..... | 193 | 1 $9\frac{1}{2}$ | 0 | 7 | $5\frac{1}{2}$ |
| $\frac{9}{12}$ Foot cube do. do. ″3×3″ wrought, framed and fixed,..... | 194 | 2 3 | 0 | 1 | $8\frac{1}{4}$ |
| $1\frac{2}{12}$ Foot cube do. do. 6″×2″ do. do. do. ..... | 194 | 2 1 | 0 | 2 | 5 |
| $7\frac{1}{12}$ Feet cube do. do. 4″×4″ wrought, framed, cemented, equal to rebated and fixed,..... | 195 | 2 4 | 0 | 16 | $6\frac{1}{4}$ |
| $8\frac{3}{12}$ Feet cube do. do. 6″×4″ wrought, framed, rebated, beaded and fixed,..... | 196 | 2 4 | 0 | 19 | 3 |
| $10\frac{5}{12}$ Feet cube do. do. 15″×$2\frac{1}{2}$″ do. do. do. ..... | 196 | 2 0 | 1 | 0 | 10 |
| $8\frac{4}{12}$ Feet cube do. do. 24″×$2\frac{1}{2}$″ do. do. do. ..... | 196 | 1 11 | 0 | 15 | $11\frac{1}{2}$ |
| $527\frac{2}{12}$ Feet super $1\frac{1}{2}$″ pine, rough, edges shot, ploughed, tongued and fixed,. | $\frac{198}{205}$ | 0 3 | 6 | 11 | $9\frac{1}{2}$ |
| $36\frac{2}{12}$ Feet super 1″ pine, wrought 1 side, edges shot and fixed..... | 199 | 0 2 | 0 | 6 | $0\frac{1}{4}$ |
| 268 Feet super 1″ pine, wrought one side, edges shot, ploughed, tongued and fixed,..... | $\frac{199}{205}$ | 0 $2\frac{1}{2}$ | 2 | 15 | 10 |
| $16\frac{2}{12}$ Feet super 1″ pine, wrought one side, edges shot and fixed,..... | 199 | 0 2 | 0 | 2 | $8\frac{1}{4}$ |
| 3 Squares $1\frac{1}{2}$″ pine, wrought, rebated and filleted with tongued heading joints bond in floor,..... | 215 | 26 9 | 4 | 0 | 3 |
| 98 Feet super $1\frac{1}{2}$″ Pine Flaps, wrought, ploughed and tongued..... | 220 | 0 $5\frac{1}{4}$ | 2 | 2 | $10\frac{1}{2}$ |
| $81\frac{3}{12}$ Feet super 2″ Pine Doors, with 6 panels, framed square and moulded on one side..... | 224 | 1 5 | 5 | 15 | $1\frac{1}{4}$ |
| $16\frac{3}{12}$ Feet super 2″ do do., framed, square head and butt on both sides.... | 227 | 1 $6\frac{1}{2}$ | 1 | 5 | $0\frac{1}{2}$ |
| 99 Feet super Sash Frames of Pine, 4″×$2\frac{1}{2}$,″ with Oak, sunk and rebated sills, &c..... | 233 | 0 $4\frac{1}{2}$ | 1 | 17 | $1\frac{1}{2}$ |
| $75\frac{7}{12}$ Feet super Oval Sashes, with rounded and hollowed style, &c..... | 236 | 0 10 | 3 | 2 | $11\frac{3}{4}$ |
| $54\frac{6}{12}$ Feet super Square Skirting of Deal, 1″ thick, bevelled on top..... | $\frac{240}{241}$ | 0 $3\frac{3}{4}$ | 0 | 17 | $0\frac{1}{4}$ |
| $70\frac{6}{12}$ Feet super Pine Steps and risers, $1\frac{1}{2}$″ thick..... | 245 | 0 7 | 2 | 1 | $1\frac{1}{2}$ |
| Carried forward..... | ..... | .....£ | 328 | 12 | 8 |

ESTIMATE,—Erecting an Observatory, &c.— *Continued.*

| QUEBEC. | | | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Brought forward | | | | | 328 | 12 | 8 |
| 26 3/12 | Feet super Pine String Board, 2″ thick, wrought one side | 248 | 0 | 4 | 0 | 8 | 9 |
| 9 | Feet Lineal Oak Hand-rail, 2½″ × 2½″, wrought and rounded | 250 | 0 | 10 | 0 | 7 | 6 |
| 20 | Feet Lineal Oak Bar Balusters, 1″ × 1″, housed into hand-rail, &c | 254 | 0 | 2 | 0 | 3 | 4 |
| 196 9/12 | Feet Lineal Mouldings, under 3″ girth | 258 | 0 | 3 | 2 | 9 | 2¼ |
| 89 6/12 | Feet Lineal Angle Staff of Pine, beaded and ploughed | 263 | 0 | 2½ | 0 | 18 | 7¾ |
| 42 | Housings | 280 | 0 | 1 | 0 | 3 | 6 |
| 57 | Feet Lineal Rounded Nosing | 289 | 0 | 1 | 0 | 4 | 9 |
| 1 | Wood-horse of Oak, the legs to be 3 feet long, &c | 318 | 5 | 0 | 0 | 5 | 0 |
| 29 6/12 | Feet Lineal Ladders, with pine and spruce sides, &c | 319 | 1 | 3 | 1 | 16 | 10½ |
| 23 | Stove Pipes of strong sheet iron | 321 | 0 | 10 | 0 | 19 | 2 |
| 1 | Stove-pipe Elbow | 322 | 1 | 6 | 0 | 1 | 6 |
| 1 | Key for Stove-pipe | 323 | 1 | 0 | 0 | 1 | 0 |
| 5 79/100 | Squares best I. C. Tin in covering roofs, shewing 6″ to the weather, laid complete | 328 | 66 | 8 | 19 | 6 | 0 |
| 54 | Feet running extra allowance for hips and gutters | 329 | 0 | 4 | 0 | 18 | 0 |
| 28 | Feet Lineal Tin, vertical pipes, 3″ diameter, &c | 331 | 1 | 3 | 1 | 15 | 0 |
| 56 | lbs. Iron, wrought in fastenings, equal to bail mountings | 377 | 0 | 8½ | 1 | 19 | 8 |
| 231 | lbs. Iron, wrought in lightning conductors, &c. equal to window bars | 379 | 0 | 4 | 3 | 17 | 0 |
| 156 | lbs. Castings of soft grey Iron | 381 | 0 | 3 | 1 | 19 | 0 |
| 2 | Bolts Barrel, 10″ long, with screws and putting on | 404 | 1 | 10 | 0 | 3 | 8 |
| 7 | setts Bolts, brass knobs, for Sashes, 10″ and 20″ long, with screws and putting on | 405 | 3 | 4 | 1 | 3 | 4 |
| 5 | Pairs 4 inch Butt Hinges, strong, of Cast Iron, with 2″ screws | 424 | 0 | 10 | 0 | 4 | 2 |
| 6 | Pairs Hinges, T 20″, with 1½″ screws | 431 | 8 | 9 | 2 | 12 | 6 |
| 4 | Locks, iron rim 7″, with Brass Knob Furniture, &c. &c. and putting on | 442 | 5 | 6 | 1 | 2 | 0 |
| 1 | Lock, iron rim, dead shot 8″, with 4 Bolts, &c., and putting on | 445 | 5 | 4 | 0 | 5 | 4 |
| 7 | Wrought Iron Handles | × | 0 | 9 | 0 | 5 | 3 |
| 101 3/12 | Feet Lineal Tin Eaves, Gutters, &c., fixed complete | × | 1 | 3 | 6 | 6 | 6¾ |
| 1 | Constructing a Time Signal, with the requisite machinery for raising and lowering the same, including Cranks, Rods, &c | × | £120 | | 120 | 0 | 0 |
| 1 | Stove, Cast Iron, 2½ feet long | × | 50s | | 2 | 10 | 0 |
| 85 3/9 | Yards super. Painting, 3 coats White | 472 | 0 | 7 | 2 | 9 | 9¼ |
| 253 4/12 | Feet Painting, Skirting, &c., 3 coats | 475 | 0 | 1 | 1 | 1 | 1¼ |
| 14 | Painting Sash Frames, 3 coats White | 477 | 1 | 3 | 0 | 17 | 6 |
| 16 | dozens Painting Sash Squares, 3 coats White | 478 | 0 | 11 | 0 | 14 | 8 |
| 1 0/12 | dozen Painting Balusters, 3 coats | 479 | 2 | 0 | 0 | 1 | 8 |
| 62 9/12 | Feet super Glazing, with best Newcastle C. Glass, in new Sashes | 496 | 0 | 7 | 1 | 16 | 7¼ |
| | | | | £ | 508 | 0 | 8 |
| | Add 15 per cent | | | | 76 | 4 | 1 |
| | | | | | 584 | 4 | 9 |
| | Add 1/10 for Contingencies | | | | 58 | 8 | 5½ |
| | Currency | | | £ | 642 | 13 | 2½ |
| | Sterling | | | £ | 526 | 15 | 5 |

Amounting to Five hundred and twenty-six pounds, fifteen shillings and fivepence, Sterling.

W. BORD,
Lieut. Col. Comm'g. Rl. Engineers
Canada East.
Quebec, 7th September, 1847.

W. C. E. Holloway,
Col. Comm.'g R. Engineers.
C. E. 20th October, 1847.

ROYAL ENGINEERS' HD. QR. OFFICE,
*Montreal*, 1*st June*, 1848.

SIR,—With reference to my letter of the 8th November last, enclosing for the consideration of the Governor General, plans, and an estimate for the construction of an Observatory in the Citadel of Quebec, I have the honour to state that I have been lately pressed for the Report, and therefore, if the design should have met with His Excellency's approval, may I solicit an intimation thereof, in order that I may fulfil the instructions which have been afforded to me, on the subject.

I have, &c.,

(Signed,) W. C. E. HOLLOWAY,
Colonel Comdg. Rl. Engr.

Major Campbell,
Secretary.

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DOWNING STREET,
*3rd August*, 1848.

MY LORD,—I have to acknowledge the receipt of Your Lordship's Despatch, No. 76, of the 13th of June, and to acquaint you that the Board of Admiralty will be prepared to grant the use of the Instruments described in the enclosed letters, to the proposed Observatory at Quebec, on condition that, if this Observatory should hereafter be discontinued, the Instruments are to be returned to the Observatory at Greenwich, where they now are.

The expense for instruments for which the Provincial Legislature will have to provide will thus be *merely* limited to the cost of two good clocks at £63 each.

I enclose for your information, copies of two letters from Dr. Airy, [17th July, 1848, and 29th do., do.,] the Astronomer Royal, on this subject, and I have to desire that you will inform me whether the whole of the instruments mentioned by him can be employed with advantage at Quebec, and also when the Observatory will be ready for their reception, in order that they may be sent.

I have, &c.,

(Signed,) GREY.

The Right Honble.
The Earl of Elgin,
&c. &c. &c.

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ROYAL OBSERVATORY, GREENWICH,
17*th July*, 1848.

SIR,—In reply to your letter of the 12th instant, and with reference to the correspondence on the equipment of an Observatory at Quebec, I have the honour to state to you for the information of Earl Grey, that, since the date of my correspondence with the Colonial Office in 1847, I have ascertained that there are in the custody of the Lords Commissioners of the Admiralty, and at present unappropriated, some instruments of the same class as those required at Quebec, and that I have reason to think that their Lordships would not be unwilling to appropriate them to the Quebec Observatory. Taking this prospect into consideration, the estimate of expense of instruments as furnished from England would be merely limited to the expense of clocks.

One good clock is necessary; its expense is estimated at £63.

A second good clock is desirable, it would add to the expense £63.

A good Transit Instrument, and a forty-two inch Telescope (both in every respect ready for mounting) can be furnished from the Stores of the Admiralty to which I have alluded.

These are all the Instruments which are strictly necessary for the proposed Observatory. But I would beg leave to submit for the consideration of Earl Grey, whether it might be desirable to take advantage of the same opportunity for securing other instruments which might be demanded for the completion of the Observatory at some future time. There are disposable from the Admiralty store, a four feet Mural Circle, and some magnetic apparatus, which are not likely to be required in England, and which may be considered as representing the class of instruments ultimately necessary for the complete outfit of the Quebec Observatory.

Under any decision of Earl Grey, I shall be gratified by aiding in any way His Lordship's determination, either by indicating more precisely to Earl Grey or to the Board of Admiralty the proper instruments, or by superintending their preparation for a voyage.

I have, &c.,

(Signed,) G. B. AIRY.

B. Hawes, Esq., M. P.,
&c. &c. &c.

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ROYAL OBSERVATORY, GREENWICH,
29*th July*, 1848.

SIR,—I have received from the Secretary of the Admiralty an announcement that the Lords Commissioners of the Admiralty have given their assent to the appropriation of certain instruments to the proposed Observatory at Quebec, for which a request had been addressed from the Colonial Office under date of the 26th instant, but no list of instruments is enclosed, and I therefore understand it to be their Lordships' desire that the wishes of the Colonial Office should be complied with as far as possible.

Referring therefore to my letter to you of the 17th instant, I beg to inquire whether it is the wish of Earl Grey that, in addition to the Transit Instrument and forty-two inch Telescope, the Mural Circle and Magnetic apparatus should also be sent. This information is necessary for me, as I propose to have the instruments examined before they are finally despatched.

It may also be useful that I should know (approximately) the probable time of despatch of the Instruments.

The cases are at present lying at the Deptford Victualling Yard.

I am, &c.,

(Signed,) G. B. AIRY.

B. Hawes, Esq.,
M. P.,
&c. &c. &c.

2nd Session, 3rd Parliament 12 Victoria, 1849,

# MESSAGE

From His Excellency the Governor General transmitting copies of communications from the Secretary of State and the Royal Engineer Department, on the subject of erecting an Observatory at the Port of Quebec.

Printed by order of the Legislative Assembly.

PRINTED BY LOVELL AND GIBSON.